September 29, 2000

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Federal Caucus
C/O Ms. Jenifer Miller
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Re: Draft FCRPS Biological Opinion; Draft Basin-Wide Salmon Recovery Strategy

Dear Ms. Krasnow and Ms. Miller:

On behalf of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), we offer the following comments on the Draft FCRPS Biological Opinion (Opinion)[1] and the Draft Basin-Wide Salmon Recovery Strategy (Strategy).[2] Our comments incorporate by reference the comments of the Columbia River Inter-Tribal Fish Commission (CRITFC), submitted on behalf of the Columbia River Treaty Tribes.[3]

[1] National Marine Fisheries Service, Northwest Region, Draft Biological Opinion, Operation of the Federal Columbia River Power System Including the Juvenile Fish Transportation Program and the Bureau of Reclamation's 31 Projects, Including the Entire Columbia Basin Project (July 27, 2000).

[2] Federal Caucus, Conservation of Columbia Basin Fish, Draft Basin-Wide Salmon Recovery Strategy (Update of the All-H Paper) (July 27, 2000). The Federal Caucus includes the Army Corps of Engineers, the Bonneville Power Administration, the Bureau of Indian Affairs, the Bureau of Land Management, the Bureau of Reclamation, the Environmental Protection Agency, the Fish and Wildlife Service, the Forest Service and the National Marine Fisheries Service.

[3] The Columbia River Treaty Tribes include the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Yakama Nation, and the Nez Perce Tribe.

Furthermore, as part of the continuing government-to-government consultation process between the CTUIR and the United States regarding these two documents, we anticipate providing additional comments on both technical and policy issues raised by the documents. The CTUIR takes such consultations very seriously, as we are sure you do. Thus, we expect that any further or supplemental input on our part, or on our behalf, will be fully and fairly considered in finalizing the documents.[4]

Our comments below are arranged in the following format:

[4] The Affiliated Tribes of Northwest Indians (ATNI), a regional association representing fifty-five native tribes, last week held its 2000 Annual Conference in Coeur d'Alene, Idaho. Among the resolutions passed by the tribal leaders in attendance was Resolution # 00-55, "Requiring Federal Commitment to Consider All Tribal Input and Comments on the Federal Government's Draft Hydrosystem Biological Opinion and the 'Conservation of Columbia Basin Fish' ('All-H Paper') Submitted as part of the Consultation Process." The Resolution states, in part, that "in developing and finalizing their proposals and documents, the federal government is obligated to consult in good faith with the tribes, as resource co-managers, pursuant to the terms of 'consultation' as defined and understood by the tribes," and that "as part of these government-to-government consultations, now occurring or being scheduled to occur possibly as late as mid- to late-October or even later, the federal government is further obligated to fully accept, consider and incorporate additional or supplemental tribal input and comments, both verbal and in writing." Resolution #00-55 concludes by calling on the federal government "to commit to accepting, considering and incorporating all tribal input and comments on the Draft Hydrosystem Biological Opinion and the 'Conservation of Columbia Basin Fish' document (All-H Paper), provided throughout and as part of the government-to-government consultation process."

I. Introduction

The CTUIR offers these comments (and any future additional input) based on our status as sovereigns and resource co-managers. The individual Cayuse, Umatilla and Walla Walla tribes that constitute the present-day CTUIR were sovereigns and resource managers for thousands of years. We successfully co-managed fish, wildlife and other resources of the Columbia River Basin with the other sovereign tribes of the region.

Since time immemorial, our people lived in harmony with the earth and all her resources. For generations, our ancestors were the caretakers of the Pacific Northwest's salmon runs, and treated them respectfully as part of the world entrusted to us. Salmon, as they made their miraculous journey to the sea and then returned home, nourished the streams, the land, and the people. In turn, our prayers and stewardship nourished them.

In the more distant past, tribes did not think in modern terms like "management" and "resources." Salmon, steelhead, lamprey, "resident" fish, deer, elk, plants, roots, berries and, most fundamental of all, water—these were gifts from the Creator. With these gifts came responsibilities—to honor them, respect them, and safeguard them for future generations. They were integral parts of the entire web of life, and essential elements of our ***way*** of life. They remain so to this day.

Columbia River Basin tribes relied on Nch'i-Wana, "The Big River," for subsistence and sustenance--food for our bodies and our souls. We still do. Salmon, in particular, continue to be the centerpiece of our economy, culture, religion and spirit, as they have for eons. That is why the Cayuse, Umatilla and Walla Walla tribes, in the Treaty of 1855 with the United States, demanded specific language guaranteeing the right to fish.

II. The Treaty of 1855, the Trust Responsibility, and Resource Management Changes

The relationship between the CTUIR and the United States was formally established by the Treaty of 1855.[5] The Treaty remains in full force and effect, binding our two nations. It is as important to us as the Constitution and the Bill of Rights are to you. In fact, the Constitution proclaims treaties to be "the supreme Law of the Land."[6] We signed the Treaty to protect and preserve our river, our fish, our people, and our way of life--in 1855, now, and forever. Without the clause assuring the right to fish, our ancestors would not have signed the Treaty. Retaining the right to continue traditional fishing practices was a primary objective of the Columbia River Treaty Tribes during treaty negotiations.[7]

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[5] Treaty with the Walla Walla, Cayuse, and Umatilla, June 9, 1855, 12 Stat. 945, *reprinted in* 2 C. Kappler, *Indian Affairs: Laws and Treaties* 694 (1904). The other Columbia River Treaty Tribes signed similar treaties.

[6] U.S. Const. art. VI, cl. 2 ("[A]ll Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding"). *See* United States v. Washington, 384 F. Supp. 312, 330 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976). Treaties with Indian tribes are contemplated by this constitutional provision. *See, e.g.*, Worcester v. Georgia, 31 U.S. (6 Pet.) 515 (1832).

[7] Tulee v. Washington, 315 US 681, 684-85 (1942).

Associated with the Treaty of 1855 is the federal government's Trust Responsibility. In addition to expressly pledging in the Treaty that the CTUIR would be secure in our fisheries, the United States accepted the obligation of a trustee. The United States has a responsibility to honor the terms and intent of our Treaty, and to act in a manner that affirmatively sustains the Treaty and the resources it encompasses. These obligations of the United States are independent of other federal statutory obligations such as the Endangered Species Act (ESA) or the Clean Water Act (CWA).

Since the arrival of non-native people beginning in the mid-nineteenth century and their subsequent rapid population growth, we have had to share resource management responsibilities. "Share" is perhaps too kind and generous a word, for in fact resource decision-making and use quickly came to be dominated by non-natives and their governments. Unlike century upon century of tribal oversight, non-native control was characterized almost exclusively by nothing more than blind extraction and exploitation, even by the federal government itself in derogation of its Trust Responsibility.

As a result, fish, wildlife and other resources of the Columbia River Basin suffered tremendously. Many of the most egregiously harmful non-native activities and practices have thankfully been halted. However, anadromous fish populations, although subject to considerable natural fluctuations, have nevertheless continued to steadily decline. In the last decade we have seen ever-multiplying listings of anadromous fish under the ESA. Federal processes related to salmon and steelhead have grown exponentially. About all that has not consistently, reliably increased has been the fish themselves.

The CTUIR and the other tribes have always looked at the world and our place in it—the "environment" and the "management" of "resources"--in a comprehensive fashion. While in the last year or two the federal government and its agencies have suddenly begun to stress "comprehensive" solutions that span all stages of the salmon life cycle, the CTUIR has always thought--and ***acted***—in this manner.

III. Recent Tribal Resource Initiatives

Approximately five years before the federal government embarked on its "All-H" approach, the CTUIR and the other Treaty Tribes pursued our own. We have long and consistently advocated a broad spectrum of gravel-to-gravel measures to aid fish and wildlife. We have already taken many positive steps to achieve recovery, sometimes helped, and sometimes hindered, by federal government policies and practices.

In 1995, well before the federal government's Basin-Wide Salmon Recovery Strategy, the CTUIR officially defined its positions regarding many salmon recovery issues in our *Columbia Basin Salmon Policy*. It is a comprehensive statement of principles, with specific recommendations, addressing the entire salmon life cycle. It looks at all the "Four Hs" of salmon mortality--the hydrosystem (in terms of both passage ***and habitat***), tributary habitat, hatcheries, and harvest.[8]

[8] Confederated Tribes of the Umatilla Indian Reservation, *Columbia Basin Salmon Policy*, Mar. 8, 1995.

In 1995, the four Columbia River Treaty Tribes, concerned over the loss of salmon and the erosion of our rights to them, published a plan to halt and reverse these trends--*Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon).* It is a lengthy, detailed plan that also comprehensively examines all causes of salmon mortality. It also contains specific recommendations for reducing mortality and restoring fish.[9]

More recently, we helped develop an additional document entitled, *The Tribal Vision for the Future of the Columbia River Basin, and How to Achieve It*. It contains a tribal perspective on some of our difficult resource management issues, along with a list of specific measures for all four "Hs" consistent with the CTUIR's *Columbia Basin Salmon Policy* and *Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon).*[10]

While the CTUIR approach has been, is, and will remain broad and comprehensive, we nevertheless recognize that the greatest loss of anadromous fish and their habitat has resulted from the construction and operation of the hydrosystem. Consequently, we have addressed this difficult issue squarely, calling for very aggressive yet scientifically justified measures. Attention to hydrosystem impacts must keep in mind that they are extensive and wide-ranging, direct and indirect. Anadromous fish are harmed from dam passage as both juveniles and adults, and by the loss of natural habitat caused by complete blockage and the dams' conversion of a free-flowing river to slack-water pools.

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[9] *Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon), The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes* (1995).

[10] *The Tribal Vision for the Future of the Columbia River Basin, and How to Achieve It* (July 15, 1999). The *Tribal Vision* was developed and submitted as part of the "Multi-Species Framework" process coordinated by the Northwest Power Planning Council. The *Tribal Vision* seeks to strike a balance between so-called "upriver" and "downriver" interests, which some have sought—incorrectly--to pit against each other. It notes that all resources are connected, and that we, in turn, are tied to them. The distinction between "natural" and "cultural" resources, for example, is a false one. For the Treaty Tribes and others, salmon *are* a cultural resource. The *Tribal Vision* is also consistent with the thoughts expressed by the Alaska Department of Fish and Game regarding the potential for restoring fish above current mainstem blockages. *See* Office of the Commissioner, Alaska Department of Fish and Game, *Comments on the Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement*, Mar. 30, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/deiscom.htm>:

> ADF&G recommends that federal agencies adequately address fish passage at the Hells Canyon Complex, as well as the Complex's downstream impacts on listed salmon and steelhead, particularly Snake River fall chinook. While passage at Hells Canyon is important whether or not the four lower Snake River dams are retired, it is absolutely essential should the lower Snake River dams remain. There is broad agreement that the Hells Canyon Complex blocked access to 90 percent of the historic Snake River fall chinook spawning and rearing habitat. Attempts at providing passage, as required by the original project license, failed and were abandoned over 30 years ago. Federal agencies should revisit fish passage issues at Hells Canyon.

IV. Specific Tribal Recommendations for the Hydrosystem

In general, the CTUIR and CRITFC, on our behalf, have called for the following regarding the configuration and operation of the Federal Columbia River Power System (FCRPS):

- Reshape existing volumes to create a more normative hydrograph[11]
- Increase water available for fish and wildlife by modifying flood control operations and obtaining irrigation water through water conservation from the upper Snake River, Banks Lake and Canada
- Removing the earthen embankments at the four lower Snake River dams to restore natural river levels, flows and conditions

Tribal analyses show that modifying current flood control management would help reestablish normative hydrographs while maintaining stable upper basin storage reservoirs, particularly in late summer and early fall. Modeling efforts indicate that modifying current flood control management would make 1.5 to 3.5 million acre-feet of water available for upper and lower river utilization without significantly increasing flooding probability in the lower Columbia.

Obtaining irrigation water through water conservation and reallocation would also help reestablish normative hydrographs while maintaining stable storage reservoir impoundments. About 2 million acre-feet could be obtained for upper and lower river distribution.

Reshaping Canadian Non-Treaty Storage water could also help reestablish normative hydrographs while maintaining stable storage reservoir impoundments, although not to the extent of the two preceding actions. Finally, breaching the four lower Snake River dams will reduce water particle travel time, increase spawning habitat in lower Snake, and generally help restore more natural riverine conditions there.

Specifically, the CTUIR has developed a detailed list of actions and modifications for the hydrosystem, to improve both mainstem passage ***and habitat***, that includes (but is not necessarily limited to) the following:

- Stop barging and trucking juvenile salmonids
- Remove existing extended-length turbine intake screens; halt installation of new screens
- In order to provide suitable habitat and safe passage, operate the hydrosystem, as it is configured now or in the future, to:
    1. Maximize in-river juvenile anadromous fish survival and health;
    2. Maximize adult anadromous fish health, survival and spawning capacity;
    3. Maintain, protect and enhance currently healthy natural riverine conditions and habitat; and
    4. Restore, rebuild and reclaim such conditions and habitat where they have been altered or destroyed

[11] *See also* Battelle's Pacific Northwest Division and U.S. Geological Survey, Biological Resources Division, *Assessment of the Impacts of Development and Operation of the Columbia River Hydroelectric System on Mainstem Riverine Processes and Salmon Habitats,* (June, 2000), p. v. <http://www.nwppc.org/impacts.pdf>: "Establishing more normative flow regimes, specifically sustained peak flows for scouring, would be essential to restoring the functional characteristics of existing, altered habitats."

- To satisfy the above criteria, incorporate the following measures in hydrosystem operations and management:
  1. Flow augmentation and manipulation, to more closely approximate the natural, historic river hydrograph;
  2. Spill and/or surface bypass to achieve 80 percent Fish Passage Efficiency (FPE) or better;
  3. Turbine operation within 1 percent of peak efficiency;
  4. Reduced water level fluctuations from power peaking operations;
  5. New and/or improved turbine technology and efficiency;
  6. Predator reduction and abatement;
  7. Water temperature and total dissolved gas reduction and abatement to comply with the federal Clean Water Act;
  8. Additional adult fish ladders, new designs and improvements to existing ladders and improved maintenance of existing ladders; and
  9. 24-hour video fish counting
- Restore natural river levels, conditions and habitat in the lower Snake River by removing the earthen embankments at Ice Harbor, Lower Monumental, Little Goose and Lower Granite dams, and mitigate for the economic and other short-term impacts that will occur; draw down Lower Granite reservoir to 710 feet (spillway crest) until embankment removal is accomplished
- Protect critical estuary habitat and restore former estuary habitat
- Improve water quality in the mainstem Columbia and Snake Rivers by reducing or eliminating toxic pollution sources and other contaminant discharges in compliance with applicable water quality criteria (at a minimum)
- Designate the Hanford Reach of the Columbia River under the federal Wild and Scenic Rivers Act, and re-establish normative river conditions there

Furthermore, the CTUIR supports an investigation of juvenile and adult anadromous fish passage capabilities, examining biological, engineering/technological, legal, political and societal aspects, to circumvent the current artificial barriers to anadromous fish migration at Chief Joseph and Grand Coulee dams and the Hells Canyon Complex (Hells Canyon, Oxbow and Brownlee dams).[12]

As to the other three "Hs," the CTUIR's *Policy*, the Treaty Tribes' restoration plan and the *Tribal Vision* Paper address them as well with similarly detailed recommendations. Taken together, our approaches have been formulated to reach definite, measurable goals. We have clearly articulated our objectives for many years.

[12] *See* Battelle's Pacific Northwest Division and U.S. Geological Survey, Biological Resources Division, *Assessment of the Impacts of Development and Operation of the Columbia River Hydroelectric System on Mainstem Riverine Processes and Salmon Habitats*, (June, 2000) < http://www.nwppc.org/impacts.pdf>. This report found that, in the Snake River, 70% of the historic riverine habitat is located above Hell's Canyon Dam, now inaccessible to anadromous fish. (p. iv); that, when constructed, Hell's Canyon Dam blocked 338 km of mainstem riverine habitat (p. 1.8); and that the area above Hell's Canyon Dam contained some of the highest quality habitat in the mainstem systems, with this stretch of river once having the highest recorded redd densities of fall Chinook in the Snake (p. 1.30).

V. Tribal Goals and Objectives

Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon) identifies the following goals:

- Restore anadromous fish to the rivers and streams that support the historical cultural and economic practices of the tribes (generally, areas above Bonneville Dam)
- Emphasize strategies that rely on natural production and healthy river systems
- Protect tribal sovereignty and treaty rights
- Reclaim the anadromous fish resource and the environment on which it depends for future generations

In 1995, the Treaty Tribes' restoration plan listed the following objectives and time frames:

- Within 7 years, halt the declining trends in salmon, sturgeon and lamprey populations originating upstream of Bonneville Dam
- Within 25 years, increase the total adult salmon returns of stocks originating above Bonneville Dam to 4 million annually and in a manner that sustains natural production to support tribal commercial as well as ceremonial and subsistence harvests
- Within 25 years, increase sturgeon and lamprey populations to naturally sustainable levels that also support tribal harvest opportunities
- Restore anadromous fish to historical abundance in perpetuity

This year, the Columbia River Treaty Tribes, privately in meetings with the federal government and more publicly, reiterated our aim of increasing naturally spawning adult salmon to 4 million fish in 25 years.[13] Conversely, federal officials have been singularly reluctant to discuss anything resembling specific numbers. The Opinion and the Strategy appear to follow this pattern.

For Snake River salmon to recover, their survival must increase dramatically. Snake River smolt-to-adult survivals presently hover around 0.4 percent. According to the best available information, these survivals must increase to *at least* somewhere between 2.0 percent and 6.0 percent. In other words, after almost ten years of ESA implementation and significant expenditures, Snake River salmon survival is only one-fifth of what it needs to be to meet the minimum requirements of the ESA.

[13] Wil Phinney, *Tribes demand 4 million salmon within 25 years*, Confederated Umatilla Journal, Feb. 2000. That number of fish within that time frame is intended to be *consistent with*, as opposed to *in satisfaction of*, tribal rights secured by treaties and executive orders. On January 25, 2000, in Washington, DC, we sought a similar commitment from the federal government—or *any* commitment on specific numerical goals and timetables—but time has again proven that such clarity and forthrightness by our trustees remains elusive.

Tribal Treaty Rights and the federal government's Trust Responsibility, however, require more than bare compliance with the ESA. The goal for the Opinion and the Strategy should not be merely de-listing currently listed species. ***The paramount objective of both the Opinion and the Strategy should be the protection and enhancement of anadromous fish populations and their habitat so as to lead to sustainable, harvestable fish populations consistent with tribal Treaty Rights and the federal government's obligation to honor those rights and fulfill its Trust Responsibility toward tribal trust resources.***[14]

Achieving this objective would naturally lead to satisfying other goals, such as ESA and CWA compliance. Through proper planning and wise policy choices, this objective can be achieved without unduly burdening non-Indian rights, interests, economic arrangements and social conditions. Although some steps in a positive direction are suggested, initial review of both the Opinion and the Strategy indicate that they are seriously inadequate to meet this objective, and other important ones as well.

VI. Opinion and Strategy: Shortcomings

A. Overview

While we hope to further discuss these assessments as part of consultation, so far the CTUIR has found that:

- Neither the Opinion nor the Strategy complies with the Treaty of 1855
- Neither the Opinion nor the Strategy fulfills the federal government's Trust Responsibility to the CTUIR
- Neither the Opinion nor the Strategy complies with the Endangered Species Act
- Neither the Opinion nor the Strategy complies with the Clean Water Act

In general, the documents lack definite actions, deadlines and accountability. They unduly promote a false choice between hydrosystem improvements and habitat improvements, erroneously obscuring the fact that hydrosystem improvements ***are*** (or ***could be***) habitat improvements. In doing so, they continue to ignore some of the most degraded habitat in the Basin—the mainstem rivers themselves (such as the lower Snake). The CTUIR would not agree with the federal government's description of its approaches as aggressive, comprehensive and likely to produce results quickly.

The Opinion and the Strategy acknowledge that their so-called "aggressive" hydro operations will still result in jeopardy. Analysis of survival and recovery of listed salmon stocks finds that the proposed changes to the FCRPS are insufficient to avoid jeopardy. Incorporating measures involving the other, non-hydro "Hs" in the RPA, however, allows the FCRPS to avoid jeopardizing the listed species. This is inconsistent with ESA requirements and your language asserting that "offsite mitigation is intended to compliment, not displace actions . . .."[15] The National Marine Fisheries Service (NMFS) concludes that the harvest, hatchery and harvest actions described in the

[14] This goal should apply to all federal government management and planning processes affecting tribal rights, interests and resources.
[15] Opinion, p. 9-2.

Strategy will provide enough offsite mitigation to achieve the necessary survival improvements. This is highly questionable given that the habitat and hatchery actions are poorly defined (generically discussed and categorized, at best).

The Opinion prescribes minimal changes to FCRPS operations and caps the federal hydro responsibility for survival and recovery actions at "full mitigation" levels. Although the federal proposal claims that hydro actions plus offsite actions in the other three "Hs" will result in no jeopardy, the documents fail to acknowledge solid, specific, reliable data for any of the populations on which to base such a determination.

Assertions that the documents reflect all possible measures to address non-harvest mortality factors are inaccurate, self-serving and unsupported. NMFS policies regarding such actions as summer spill and power peaking are based more on BPA's financial circumstances than on salmon biology. There is no discussion about excessive cattle grazing on public lands along degraded streams in critical salmon habitat, and why it is allowed to continue.

The Strategy indicates that spring chinook populations in the Imnaha and Minam rivers in Northeastern Oregon will, at a minimum, need another 45 percent population growth rate increase even after the so-called "aggressive" hydro actions.[16] How can such improvements be achieved when ocean and tributary harvest is insignificant, habitats are already in near-pristine condition or in wilderness status, managers agree not to intervene with hatchery supplementation in the Minam River, and mainstem fisheries have already been drastically curtailed? Efforts that do not include lower Snake River dam removal will not even achieve the minimal federal goals and most certainly will not achieve goals that provide meaningful levels of natural production and harvest for tribal and non-tribal fishers.

A major flaw in the Opinion and Strategy is that prescribed remedial actions do not correspond to known factors limiting production and survival of fish. The documents recognize high mainstem juvenile mortality rates (51 percent for Snake River spring chinook and summer steelhead and 84 percent for fall chinook), but propose relatively little beyond the current status quo operations and configuration that cause such impacts.[17] Other actions, such as harvest, which result in proportionally far less mortality, are subject to more aggressive proposed restrictions. This imbalance in the relationship between problem and solution translates to continued delay in addressing the primary factors causing salmon declines. It is inconsistent with ESA recovery requirements and federal government treaty and trust obligations regarding appropriate allocation of the conservation burden. While in many respects federal-tribal relations have improved over the years, the Opinion and the Strategy lead us to wonder whether they are simply more artfully crafted throwbacks to earlier, less enlightened federal policy.[18]

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[16] Opinion, p. 9-12.

[17] Opinion, p. 9-10.

[18] *See, e.g.*, BPA Currents, July 25, 1947 ("The Department [of the Interior] agrees that interests of the Columbia River fisheries should not be allowed indefinitely to retard full development of the other resources of the river. It concludes moreover that the overall benefits to the Pacific Northwest from a thorough going development of the Snake and the Columbia are such that the present salmon run must, if necessary, be sacrificed."); Office Memorandum from Samuel J. Hutchinson, Acting Regional Director, Bureau of Commercial Fisheries (predecessor to NMFS), (Jan. 16, 1951) ("[T]he beneficial effects [of The Dalles Dam] would compensate for the detrimental conditions that exist there at present. In brief, it would be easier for the fish to go over a ladder in the dam than to fight their way over Celilo Falls [sic]. The Indian commercial

To summarize the Opinion, the Strategy, and the prevailing attitude that permeates them most brutally and succinctly: the dams are sacred. Even though the federal hydrosystem exacts an enormous toll on fish and their habitat, other, mostly non-federal, less injurious actions will be constrained instead to make up for the losses caused by the dams. The federal government is looking to the non-hydro "Hs," over which it has far less control, to mitigate for the harm caused by the one "H" over which it has exclusive control. Perhaps this is simply the modern "Golden Rule" ("The one with the gold, makes the rules") in hydropower terms: "The one who owns the dams, makes the dam rules." In any event, the CTUIR finds this wholly unacceptable.

B. The Opinion's Incidental Take Statement

The Opinion itself plainly illustrates its own failings. The federal hydrosystem "jeopardizes the continued existence" of listed salmon and steelhead—threatens to drive them to extinction. To avoid "jeopardy," the Opinion proposes a so-called "Reasonable and Prudent Alternative" (RPA). If the alternative is implemented, "jeopardy" will be avoided and the listed species will survive and eventually recover, in theory, as required by the ESA.

However, even if the Opinion's RPA is implemented (a risky assumption), the federal hydrosystem will still kill up to 88 percent of listed juvenile Snake River fall Chinook, according to NMFS.[19] This is "legal," by the agency's interpretation of the ESA. Alarmingly, an 88 percent death rate for juvenile Snake River fall Chinook leads NMFS to conclude that the hydrosystem will ***not*** threaten them with extinction. The Opinion's Incidental Take Statement (ITS) permits this "hydro harvest." Even assuming this is legal under the ESA (another questionable assumption), it utterly fails to account for the more demanding requirements imposed by Treaty Rights and the Trust Responsibility, and separate CWA mandates, among others.

C. "Pay no attention to the lack of action and accountability behind the curtain . . ."

Unfortunately, the Opinion and the Strategy are more exercises in "perception-management" than salmon management. Upon close inspection, many of the "actions" are in reality calls to "investigate," "develop" and "study." The attention is, once again, on creating plans for actions in the future, not on taking actions now.

The Northwest Power Planning Council's (NWPPC's) draft amended Fish & Wildlife Program avoided dealing with the hydrosystem, inappropriately deferring to federal processes. Unfortunately, the Opinion and Strategy similarly avoid facing up squarely to difficult hydro issues; the burden of conservation is shifted largely to harvest, and to tributary habitat and hatchery actions which are to be identified through NWPPC subbasin planning. As usual, there seems to be much fingerpointing to "someone else" to fix problems, with little substance and accountability anywhere.

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fishery would be eliminated and more fish would reach the spawning grounds in better condition. . . . [Referring to Priest Rapids Dam,] it would eliminate the red salmon runs going into the upper Columbia. . . . [W]e have little if any objections to Hells Canyon Dam.").

[19] The 1995 FCRPS Biological Opinion allowed the federal dams to kill up to 99% of certain migrating juveniles; NMFS may therefore attempt to claim that it has made "significant improvements," but the CTUIR would disagree.

The Opinion and Strategy rely on the very tenuous assumption that funds will be authorized and appropriated, projects will be implemented and results will begin to show relatively soon. We already know that short of breaching, habitat and hatchery actions will not show the necessary restoration results in the short term.

At this time, we lack necessary budget details for the federal proposal, except for the very limited description provided in the Strategy. It is difficult to gauge the adequacy of habitat and hatchery actions without additional, more detailed information regarding appropriations requests. For example, funds to implement the federal proposals are not currently available in appropriations committee mark-ups. Unless the Administration seeks a supplemental appropriation for FY 2001, new federal actions will have to wait until the FY 2002 appropriations cycle.

While the Opinion calls for a review of actions (including authorization and funding) after three years,[20] failure to take an action, or authorize or fund it, merely results in reinitiation of consultation. After five years, an unsatisfactory review again simply leads to reinitiation of consultation. If the reviews show inadequate improvements, the region must prepare to move forward with alternative measures. The CTUIR maintains that we have already reached this stage. Perpetual study of whether non-breaching measures alone will be successful will only lead to further, dangerous delay. It is time to clarify what breaching and associated mitigation will accomplish, and begin to lay the preliminary groundwork.

In the contemplated reviews at five and eight years,[21] the only trigger is whether or not biological performance standards have been met. There is no trigger, similar to that at three years, for failing to act, authorize or fund. If anadromous fish populations remain seriously depleted after eight years, then a specific plan for changes to avoid jeopardy must be proposed, but it is unclear whether NMFS is required to seek congressional authorization and funding for the plan.

The documents call for "rigorous mid-point reviews" of progress after five and eight years, with supposed pursuit of breaching triggered by "certain conditions" of failure.[22] Yet these conditions are vague and unclear regarding performance standards, which remain to be defined pending further "researching of critical uncertainties." Anything less that clearly defined quantitative performance standards to be achieved by specified dates is merely another delay tactic to buy time, in our view.

Flow objectives, in fact, turn out not to be "hard constraints."[23] In other words, they don't have to be met. Annual reports from the Action Agencies (Army Corps of Engineers, Bureau of Reclamation, Bonneville Power Administration) are specified, describing actions required in a given year and the status of those actions. However, there are no consequences for failing to report or for failing to implement an annual action.[24] There should be specific consequences for non-performance and a mechanism for changing actions prior to the trigger points if the data indicate that such a change is needed.

[20] Opinion, p. 9-3.
[21] Opinion, p. 9-22.
[22] Opinion, p. 9-5.
[23] Opinion, p. 9-43.
[24] Opinion, pp. 9-25 to 9-33.

D. Clean Water Act: On the Margins--or Off the Map?

High water temperatures resulting from the hydrosystem have been a recurrent problem.[25] Yet both the Opinion and the Strategy are deficient regarding actions to address water quality problems associated with the dams. The Strategy states that the "long term" objective is to "attain state and tribal water quality standards in all critical habitats in the Columbia and Snake Rivers."[26] The Opinion mentions "improving" temperature and dissolved gas with "numerous measures."[27] Four are highlighted: structural and operational spillway modifications; surface bypass development; cool water releases from storage reservoirs (e.g., Dworshak); and "special powerhouse operations (e.g., McNary)."[28] However, no more specifics as to timetables or actions are supplied. No specified consequences for failure to improve water quality are provided.

Leaving the four lower Snake River dams in place, as currently configured and operated, will not lead to compliance with the CWA. Like its treaty and trust obligations to Indian tribes that are distinct from its ESA responsibilities, the CWA imposes separate duties on the Corps and other Action Agencies. The ESA does not supersede or re-define the requirements of other laws: "the Endangered Species Act and the Clean Water Act are distinct statutory schemes. Compliance with one statute does not equal compliance with the other."[29]

Corps operation of the lower Snake River dams must comply with Washington's water quality standards. Therefore, if the dams are to remain in place, they must be modified to comply with standards for temperature and dissolved gas. Managing the dams, either through operational decisions or by failing to implement structural modifications, so that they fail to meet water quality standards is not an option. The Opinion should state that the dams are violating water quality standards and set forth a specific plan for getting the dams into compliance with the Clean Water Act by a date certain.

Interestingly, the Strategy notes the objective of offsite tributary habitat compliance with water quality standards in fish spawning, rearing and migratory areas.[30] The CTUIR supports this objective, but is curious as to why this objective is not also applied to mainstem habitat (particularly for reservoir temperatures) where all three of these fish life history stages also occur. In comparison, the stated habitat objective for the mainstem is extremely weak and calls for habitat improvements only on an "experimental basis" with emphasis on research. Why do we need to study if cool, flowing water is good for fish during the next five to eight years when we already know fish thrived under such conditions for thousands of years?

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[25] *See, e.g.*, Dan Hansen, *Water too warm, EPA tells corps[,] Dams would be more expensive if they complied with Clean Water Act*, Spokesman-Review, Aug. 5, 2000 <http://www.spokane.net/news-story.asp?date=080500&ID=s835062>.
[26] Strategy, Vol.1, p. 39.
[27] Opinion, pp. 9-37, 9-154.
[28] Opinion, pp. 9-37 to 9-38, 9-154.
[29] National Wildlife Federation v. Corps of Engineers, Civ. No. 99-442-FR (Mar. 21, 2000) at 16, *citing* Seattle Audubon Society v. Evans, 952 F.2d 297, 302 (9th Cir. 1991).
[30] Opinion, p. 9-110.

E. Major Overhaul or Minor Tinkering?: Flows, Spill and Dam Modifications

In contrast to recommended tribal measures concerning flows, spill and dam modifications noted above, the Opinion and the Strategy are considerably less aggressive. Flow objectives remain the same as those in the 1995 FCRPS Biological Opinion; no increases are called for.[31] Idaho water contributions remain fixed at 427,000 acre-feet.[32] Negotiations with Idaho for more water will continue, but Idaho can stall demands for new water without penalty. No means to address the consistent non-attainment of existing flow targets is identified.

The CTUIR appreciates federal agency efforts to negotiate with British Columbia Hydro to secure an additional 2 million acre-feet of water for the Columbia. Although 500,000 acre-feet may be delivered relatively soon, the rest will take at least three to five years.[33]

Regarding spill, the Opinion largely maintains the status quo, with slight changes possible in spill volumes and timing. There is no provision for summer spill in the lower Snake River to aid fall chinook migration.[34] Instead, artificial transportation would continue at current high levels generally and would be "maximized" in the summer, while NMFS simultaneously expresses the desire to "spread the risk." Agencies will study whether to reduce salmon trucking sometime in the future.[35] In the Spring, spill in the Snake would be only 12 hours per day at collector projects, and at non-collector dams appears to be for 24 hours. Dam modifications include research and installation of fish passage devices such as surface bypass collectors and flow deflectors to reduce dissolved gas.

Although some of the above actions may provide some benefits, others do not, and the CTUIR believes that on the whole they are certainly insufficient to constitute a "major overhaul" such as that envisioned by Judge Marsh in 1994. Furthermore, and more fundamentally, NMFS has failed to demonstrate an adequate scientific foundation for its basic approach. Indeed, the majority of the science seriously questions the wisdom and efficacy of barging and trucking, for example, yet NMFS continues to cling tenaciously to this frayed band-aid as the cornerstone of federal salmon recovery policy.

F. Science: Good Science, Bad Science--and Political Science

1. Introduction

In assessing the pros and cons of whether or not to remove the dams, as well as other measures, the CTUIR has steadfastly supported the use of "good science." Admittedly, this is a popular refrain, with widely differing meanings depending on the proponent. The CTUIR maintains that there is already ample, sound science supporting the necessity and practicality of breaching the four lower Snake River dams. Unfortunately, there is evidence that raises concerns over the degree to which

[31] Opinion, p. 9-40.
[32] Opinion, p. 9-48.
[33] Strategy, Vol.1, p. 78.
[34] Opinion, pp. 9-58 to 9-59.
[35] Opinion, pp. 9-58 to 9-59.

the federal government has twisted and tortured the science to lend support to less politically controversial approaches than breaching.[36]

Salmon recovery has never been immune from politics. Clearly, federal agencies have often seemed more focused on saving face than saving fish.[37] Earlier scientific work by NMFS related to the Opinion and the Strategy has been seriously flawed, and has received considerable criticism on both procedural and substantive grounds.[38] While we hope that past errors have been corrected, we

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[36] *See, e.g., Dueling science snags dam-breaching debate*, The Oregonian, Dec. 26, 1999.

[37] *See, e.g.*, William Dietrich, *Northwest Passage: The Great Columbia River*, 1995, p. 308-09:

> "Most of what is stated at the dams is true, but the displays deliberately ignore other truths. We have not just harnessed the Columbia, we have turned it into a body of water so utterly different from its natural state, and in doing so have deliberately thrown the entire Northwest ecosystem out of whack. . . . To visit a single dam, as a typical visitor might do, is to encounter a display that seems one-sided in the acceptable way that American advertising is one-sided. But to visit dam after dam after dam as I did--to see a monotonous repetition of an edited history that crosses into myth--finally began to nettle, and then irritate, and I realized the perception of the Columbia that the public draws from its powerhouses is as deliberately engineered as the dams themselves. I found myself mentally referring to each one as a Temple of Half-Truth. . . . I became impatient . . . with the lack of acknowledgment that there could ever have been another side, that there was ever any question of balance, any need for honest regret, or any appreciation for the wild country that has passed. The . . . failure to recognize this . . . seemed dishonest finally, a deliberate evasion of truth. So I finally thought of them [the dams] as a House of Lies: a government fairy tale."

[38] *See* U.S. Fish and Wildlife Service, Review of the NMFS Draft Anadromous Fish Appendix, Apr. 12, 1999, p. 3: "[A]s we indicated in our first review, we are concerned about the lack of peer review."; Idaho Department of Fish and Game, Comments On The National Marine Fisheries Service's "An Assessment Of Lower Snake River Hydrosystem Alternatives On Survival And Recovery Of Snake River Salmonids" (Draft Anadromous Fish Appendix), Aug. 30, 1999: "Although NMFS did not solicit comments from the state and tribal fisheries agencies, the unusual and autonomous approach NMFS used in developing A-Fish requires our response." (cover letter); "NMFS' decision to minimize technical collaboration and review of A-Fish by state and tribal scientists runs counter to the PATH process established by NMFS in response to Judge Marsh's mandate for inclusion of state and tribal technical expertise (IDFG v NMFS, March 28, 1994)." (p. 1); Oregon Department of Fish and Wildlife, Comments of the Oregon Department of Fish and Wildlife on the FCRPS Section 7 Consultation White Papers, Nov. 10, 1999 (cover letter): "We request that NMFS identifies a collaborative process that allows direct involvement by the state and tribal fishery managers in finalizing the white papers."; Dr. Peter Kareiva, *et al.*, An Introduction To NMFS Decision-Support Science For ESA Decision Making, With Examples, Aug. 31, 1999: "The weak point in this analysis is determining whether or not these sorts of improvements are feasible." (p. 32); "For example, whether or not habitat improvements could increase first year survival by 10%, or whether anything could enhance estuarine survival is unknown." (p. 37); "[F]urther management actions aimed at harvest and downstream survival for spring/summer chinook salmon (excluding dam breaching) are not likely to be that helpful. . . ." (p. 32); NMFS, Conservation Of Columbia Basin Fish: Building A Conceptual Recovery Plan With The "Four Hs" [Overhead Projections], Nov. 1999: "Not all alternatives may be legally defensible or feasible to implement."; The Independent Scientific Advisory Board, Review of the National Marine Fisheries Service Draft Anadromous Fish Appendix, Oct. 12, 1999: "The analytical methods and approaches suffer from: Over-reliance on optimistic scenarios . . .." (p. 4); "The implicit argument in the AFA in favor of delaying the hydrosystem decision does not adequately evaluate the biological costs or benefits of delay, and does not specify the substantial commitments and investments that would be necessary in order for the benefits of delay to be realized." (p. 4); "We do not believe that the 'survival criterion' and the 'recovery criterion' used in the AFA are in tune with the current best scientific understanding for crafting survival criteria and recovery criteria for ESA applications." (p. 5); "Further, the AFA seems to imply that it provides a basis for evaluating the merits of possibly deferring any commitment on the dam breaching decision on grounds that important uncertainties may be resolved in the interim. We are not entirely comfortable with that message." (p. 16); "We are not enthusiastic about a decision spiral in which the 'delay' option is chosen simply to provide time for properly analyzing the 'delay' option." (p. 20); The Independent Scientific Advisory Board, Review of National Marine Fisheries Service Draft Cumulative Risk Analysis Addendum,

remain hesitant when we consider the source—an agency that claimed harvest by the hydrosystem of up to 99 percent of some salmon populations did not "jeopardize [their] continued existence."

Nov. 8, 1999: "The extinction probabilities definitely are high enough to cause concern." (p. 3); "The discussion of interventions to achieve improvements in survival (and reproduction) is pursued only superficially, . . . and without discussion of feasible measures to increase estuary and ocean survival." (p. 3); "The ISAB is not comfortable with the apparent drift toward delay of the actual decisions about the management decisions bearing on hydrosystem operations, possible dam breaching, and other interventions as well." (p. 4); "In particular, the costs of a last ditch effort, conducted in a crisis atmosphere, to attempt to save the populations after their situation has deteriorated even further than at present might well exceed the costs of taking preemptive action right now." (p. 7); "If the implication is that we can relax our concern about the need for further improvement in management in the migration corridor because there could hypothetically be such a high return on improvement elsewhere, the argument is curiously incomplete." (p. 11); Fish Passage Center, Comments on the Draft Anadromous Fish Appendix, May 5, 1999: "Continued collection of information is no more likely to elucidate 'the answer' than the past 30 years of data collection."; Idaho Department of Fish and Game, Comments On The National Marine Fisheries Service's "An Assessment Of Lower Snake River Hydrosystem Alternatives On Survival And Recovery Of Snake River Salmonids" (Draft Anadromous Fish Appendix), Aug. 30, 1999, p. 10: "The A-Fish accurately describes the natural river option (breach) as the most biologically effective, certain and risk-averse option for recovering ESA-listed Snake River salmon and steelhead. The A-Fish then inaccurately attempts to describe a narrow set of assumptions that, if true, might indicate smolt transportation [fish barging and trucking] could perform as well as the natural river. A-Fish implies additional years of research may answer this question. IDFG wishes NMFS was right. Regrettably, the plausibility of this narrow set of assumptions is not supported by the preponderance of scientific evidence."; Columbia River Inter-Tribal Fish Commission, A Review Of The Anadromous Fish Appendix, Aug. 30, 1999, p. 7: "It is unrealistic to suggest improving habitat will recover salmon when there is abundant, high quality spawning and rearing habitat in some areas that are literally devoid of fish."; U.S. Fish and Wildlife Service, Review of the Draft Anadromous Fish Appendix, Apr. 12, 1999, p. 3: "As we indicated in our first review, we are concerned that considerable emphasis is being placed on a new, unreviewed estimate of 'D'."; Michele DeHart, Director, Fish Passage Center, Comments on Three National Marine Fisheries Service White Papers, Oct. 28, 1999: "These papers all have a fatal flaw in that they intertwine pure speculation with biological data without differentiating between the two." (p. 1); "Survival of juveniles in the Snake River would increase by 30% with dam breaching. Survival is not the same now, as it was pre dam development. In the white paper NMFS observes that juvenile survival is as high with eight dams in place as it was in the '60's with only four dams in place. They conclude that even with juvenile survival estimates as high as in the '60's the adult returns remain extremely low. Consequently the blame must be placed elsewhere, not on the hydrosystem. This is the most distressing of NMFS's attempts to rationalize the status quo because it is a serious and blatant attempt to mislead readers." (p. 11); U.S. Fish and Wildlife Service, Review of the four NMFS White Papers, Oct. 1999: "In these four draft white papers, NMFS appears to be assuming that the wild population levels will rebound under status quo and transportation management, despite the evidence they have presented to the contrary. . . . Direct mortality is emphasized instead of total mortality, the sum of direct and delayed mortality that determines overall survival. Evidence for delayed mortality is presented repeatedly throughout these papers, but the explicit effect of delayed mortality on overall survival is not discussed."; Oregon Department of Fish and Wildlife, Comments of the Oregon Department of Fish and Wildlife on the FCRPS Section 7 Consultation White Papers, Nov. 10, 1999: "As they are written, the white papers appear to support continuation of status quo operation of the FCRPS without making changes in fish protection measures of the existing BiOps. . .. They should also describe what management actions are necessary while studies go forward, given that the risk of extinction of these stocks is very high (this year, in two of the most productive tributaries for spring/summer chinook located in pristine wilderness areas, zero fish returned to spawn)." (cover letter); "[T]he paper fails to acknowledge that the smolt to adult survivals of transport fish in studies over the last 30 years have shown that transportation [fish barging and trucking] has failed as a mitigation tool in not reversing the declining trends on Snake River salmon." (p. 3); "The paper attempts to glaze over the reality that transportation [fish barging and trucking] not only has failed to reverse the declining trends in Snake River fish runs but may have also directly contributed to the declines." (p. 4); "Our review of the D value analysis (Appendix A of Attachment 1) clearly demonstrates that NMFS' D estimate over-stated the benefits of transportation compared to the benefits of drawdown [partial dam removal] of Snake River dams." (p. 5); "And finally, the paper needs to acknowledge that although passage survival has been improved over the last 20 years, these improvements are inadequate to meet ESA survival and recovery goals." (p. 7).

Although that figure is now down to 88 or 84 percent, we are told, the CTUIR is still no more confident of certain federal findings regarding crucial scientific matters.

As another example, the Corps promised that its Draft Feasibility Report/Environmental Impact Statement (FR/EIS) on Lower Snake River Juvenile Salmon Migration would be as fair, accurate and honest as possible.[39] The CTUIR takes promises very seriously; in exchange for a promise, our ancestors ceded to the United States over six million acres of land.[40] Nevertheless, on two separate occasions, two separate Corps officials closely tied to the process acknowledged to CTUIR representatives that it had been subject to congressional interference. This was consistent with information we had received from others working within the process. In addition, this interference and its effects were further confirmed by recent news accounts.[41] The CTUIR is concerned that ***any*** federal agency assessments and analyses of salmon recovery issues—breaching in particular—may be inherently, inevitably biased, tainted and untrustworthy.

The desire to develop an RPA with minimal hydro actions seemed to serve as initial guidance, with other remedial actions added to justify a pre-determined conclusion. In this instance, it appears that NMFS has failed to use the best available science, and to adequately consider risk and uncertainty. We remain concerned that the NMFS Cumulative Risk Initiative (CRI) continues to ignore tribal and state technical comments indicating that its analyses are severely flawed.

The CTUIR is also concerned over an apparent change in the jeopardy standard, possibly "lowering the bar" for the benefit of the FCRPS. For Snake River spring/summer Chinook, the survival standard under the 1995 FCRPS Biological Opinion mandated at least a 70 percent probability of achieving survival population thresholds (either150 fish or 300 fish, depending on watershed size) at 24 years and 100 years for 4 out of 5 index stocks. The new survival standard developed in the CRI process appears to be a 5 percent or lower likelihood of "absolute extinction" in 100 years. "Absolute extinction" is defined as "one or no fish for five consecutive years in a population."

2. Breaching: Reasonable, Prudent—and Widely Supported

Despite the questionable veracity of some of the information from federal sources regarding the merits of dam removal, the "good science" supporting breaching remains strong, clear and increasingly overwhelming. Yet the Opinion and the Strategy both appear to unjustifiably dismiss, discount or disregard it. It has been suggested that decisions supposedly based on science have

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[39] *See, e.g.*, Bill Rudolph, *Corps Says Claims for Breaching Inaccurate*, NW Fishletter 77, Mar. 17, 1999 < http://www.newsdata.com/enernet/fishletter/fishltr77.html#2> ("Brig. Gen. Robert Griffin, commander of the Corps' Northwestern Division, said his agency is committed to providing a factual report 'that identifies all of the effects, both positive and negative, on river resources and uses.'").

[40] Federal government promises to tribes date back to at least the founding of the United States, including its first leader's commitment that "[t]he General Government will never consent to your being defrauded, but it will protect you and all your rights." George Washington, President of the United States, Dec. 29, 1790, in a statement in response to an address by the Chiefs and Councilors of the Seneca Nation, in 4 American State Papers (Indian Affairs, Vol. I, 1832) 142; 31 Washington, Writings (United States George Washington Bicentennial Comm'n. ed. 1939) 179, 180 (quoted in Federal Power Commission v. Tuscarora Indian Nation, 362 U.S. 99, 139, 80 S.Ct. 543, 4 L. Ed. 2d 584).

[41] Michael Grunwald, *Snake River Dams: A Battle Over Values*, Washington Post, Sept. 12, 2000, at A16 http://washingtonpost.com/wp-dyn/articles/A51988-2000Sep11.html.

instead been shaped more by political factors. There have also been continued attempts to cloud much of the evidence favoring breaching (and criticizing artificial transportation) because of erroneous, exaggerated or misplaced economic fears and paranoia. Therefore, the CTUIR would like to mention again some of the grounds for supporting dam removal that have been cited by many various sources, refuting those who would argue that it is not reasonable or prudent.

- Confederated Tribes of the Umatilla Indian Reservation

The CTUIR supports drawdown of the lower Snake River to natural river levels by removing the earthen embankments at Ice Harbor, Lower Monumental, Little Goose and Lower Granite dams. The four lower Snake River dams must be partially dismantled to prevent further extinctions of Snake River salmon. In 1995, the CTUIR stated in our *Columbia Basin Salmon Policy*:

> We support the staged, strategic modification or removal of dams, such as the lower four Snake River Dams . . ., coincident with development of a New Energy Plan for the region and implementation of aggressive energy conservation programs.[42]

Salmon need healthy habitat, and mainstem rivers are (or were) habitat. Breaching is habitat restoration, and with it will come salmon restoration.[43] It is no coincidence that the healthiest remaining fall Chinook salmon population is in the Hanford Reach, the last remaining undammed stretch of the Columbia and Snake Rivers.

- Nez Perce Tribe

The Nez Perce Tribal Executive Committee, by resolution, has officially endorsed removal of the four lower Snake River dams.

- Columbia River Inter-Tribal Fish Commission

CRITFC, representing the four Columbia River Treaty Tribes, endorsed dam breaching in *Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon)*:

> The tribes' preferred alternative for Snake River Dam drawdown would require structural modifications at Lower Granite, Little Goose, Lower Monumental, and Ice Harbor dams to allow for drawdown to natural river level. Drawdown to natural river level is generally intended to restore flows to the water surface elevations that existed in the Snake River prior to impoundment.[44]

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[42] Confederated Tribes of the Umatilla Indian Reservation, *Columbia Basin Salmon Policy* 12 (Mar. 8, 1995).
[43] While touting the need for watershed restoration, the federal government seems reluctant to admit that the mainstem is (or was) salmon habitat, at the heart of a single great watershed, once the richest on earth in terms of salmon productivity. *See U.S. officials want salmon protected*, Tri-City Herald, Feb. 27, 1998 ("Our salmon populations are sick because our watersheds are sick. We won't recover the salmon until we recover the health of the watersheds that are their home.") (quoting William Stelle, NMFS Regional Administrator).
[44] *Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon), The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes*, p. 5B-30 (1995).

- Affiliated Tribes of Northwest Indians

The Affiliated Tribes of Northwest Indian (ATNI), a regional coalition of 55 sovereign tribal governments, passed a resolution three years ago supporting "Natural River" drawdown:

> [T]he Affiliated Tribes of Northwest Indians calls for restoring essential natural river features in part by means of drawdowns--specifically, drawdown of the four Lower Snake River dams to natural river level . . ., as recommended in *Wy-Kan-Ush-Mi Wa-Kish-Wit* (Spirit of the Salmon)--as the best, and perhaps only, means to prevent the ultimate extinction of endangered Snake River salmon and other species of critical importance to the ATNI member tribes' economy, culture, religion and way of life.[45]

Just last week, at its 2000 Annual Conference in Coeur d'Alene, Idaho, ATNI reiterated its position in Resolution #00-63, "Endorsing Breaching the Four Lower Snake River Dams."[46]

- National Marine Fisheries Service

Views on breaching from the National Marines Fisheries Service have been diverse, to say the least. Yet at times even the obvious becomes inescapable. For example, according to one NMFS official,

> [T]he most current modeling shows that drawing down the river to its pre-dam level by breaching dams would lead to higher survivals for spring and summer chinook than improving fish transportation.[47]

- U.S. Fish and Wildlife Service

The CTUIR agrees with the conclusion in the U.S. Fish and Wildlife Service's Coordination Act Report[48] that dam breaching would provide the most benefits to fish and wildlife, including anadromous fish species listed as threatened or endangered.[49] The agency found that partially removing the dams "would best increase survival of juvenile anadromous fish migrating through the area of the four lower Snake River dams,"[50] "would significantly increase the area of spawning and

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[45] Affiliated Tribes of Northwest Indians, *Resolution #97-28, "Endorsement of Natural River Restoration to Protect and Enhance Fish & Wildlife Populations in the Columbia River Basin"* Feb. 13, 1997.

[46] Julie Titone, *Indian leaders advocate breaching dams*, Spokesman-Review, Sept. 22, 2000 <http://www.spokane.net/covers/people/staff.asp?ID=bio145>.

[47] NW Fishletter, Nov. 25, 1998 (citing NMFS representative Tom Cooney).

[48] U.S. Fish and Wildlife Service, Draft FR/EIS, Appendix M, Fish and Wildlife Coordination Act Report M10-1 to M10-12 (Dec. 1999).

[49] U.S. Fish and Wildlife Service, Draft FR/EIS, Appendix M, Fish and Wildlife Coordination Act Report M10-1 (Dec. 1999) ("It is clear in our assessment that the Natural River Drawdown Alternative would provide many more benefits to fish and wildlife and their habitats than the other three alternatives in the area of the four lower Snake River dams."). *See also* Brent Hunsberger, *Dams hurt river quality, the EPA says*, The Oregonian, Apr. 28, 2000 <http://www.oregonlive.com/news/oregonian/index.ssf?/news/oregonian/00/04/lc_61epa28.fram> ("The U.S. Fish and Wildlife Service late last year [1999] said breaching the four dams would be the best way to restore ecological health in the Snake River.").

[50] U.S. Fish and Wildlife Service, Draft FR/EIS, Appendix M, Fish and Wildlife Coordination Act Report M10-1 (Dec. 1999).

rearing habitat for Snake River fall chinook, a threatened species,"[51] "is the only alternative that addresses restoration of natural or near natural riverine conditions that would produce a myriad of positive influences on natural processes and fish and wildlife,"[52] is the only alternative that addresses lamprey and white sturgeon passage and migration needs,[53] and would "improve water quality."[54]

- U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has seriously questioned the merits of the various non-breaching alternatives under study, calling them "unacceptable."[55] It has stated that the

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[51] *Id.*

[52] *Id.*

[53] *See* U.S. Fish and Wildlife Service, Draft FR/EIS, Appendix M, Fish and Wildlife Coordination Act Report M10-9, 12 (Dec. 1999).

[54] U.S. Fish and Wildlife Service, Draft FR/EIS, Appendix M, Fish and Wildlife Coordination Act Report M10-12 (Dec. 1999).

[55] *See* Brent Hunsberger, *Dams hurt river quality, the EPA says*, The Oregonian (Portland, OR) , Apr. 28, 2000 <http://www.oregonlive.com/news/oregonian/index.ssf?/news/oregonian/00/04/lc_61epa28.fram>:

> The U.S. Environmental Protection Agency told the U.S. Army Corps of Engineers Thursday [April 27, 2000] that four lower Snake River dams harm river quality, threaten endangered salmon and might best be breached to comply with the federal Clean Water Act. The EPA found the corps' $20 million, four-year study of ways to improve salmon survival inadequate, according to an agency letter . . .. It called the corps' three proposed alternatives to dam breaching "unacceptable" and found that, in the absence of more analysis, breaching loomed as the best way of restoring health to the Snake River. [Chuck Clarke, EPA Regional Administrator, said that the Corps had failed to deal with water quality in any alternative.] Doug Arndt, chief of the corps' fish management division, said the EPA's sharp comments took the agency by surprise, because it based its environmental assessment on protecting salmon and not on overall river health. [Restoring "overall river health" is essential to "protecting salmon," in the CTUIR's estimation.] The EPA is the second federal agency to raise questions about the dams. . . . Last month, . . . a federal judge ruled the corps must manage the dams in compliance with the Clean Water Act. . . . [O]bservers say the EPA ruling will make it difficult for the corps to argue that the dams don't adversely affect water quality. . . . Water temperatures higher than 68 degrees can harm salmon and make them more vulnerable to disease, scientists say. High levels of dissolved gases, such as nitrogen, can create in fish a condition similar to the bends. . . . [A] 1998 analysis by the EPA found that the dams nearly double intensity and duration of temperature violations. Altering the dams to reduce water temperatures . . . could cost hundreds of millions of dollars and hit taxpayers, electric ratepayers and farmers. Such strategies could include reducing irrigation withdrawals by Idaho and Washington farmers to speed water flows downriver and to limit the time water spends warming behind the dams. It also could include retrofitting the dams so they draw cool water from their reservoirs' depths. In its draft environmental impact statement, the corps declared that the Snake River's water temperatures had cooled since it built four dams in the 1960s and 1970s and turned the formerly free flowing river into a series of reservoirs. EPA's review found that conclusion "flawed and misleading." The EPA said the corps' selective use of data and study manipulations led to a false and insupportable conclusion. The EPA said the corps used imprecise temperature readings made by eye from a thermometer that measures water entering dam turbines. But it ignored electronic measurements of temperatures taken on either side of each dam, the EPA said. Using those measurements, the EPA found

four lower Snake River dams degrade water quality and threaten salmon. It has suggested that breaching would be the best means to eventually comply with the federal Clean Water Act. EPA contends "that dams, by pooling water, elevate water temperatures beyond levels considered safe for young, migrating salmon."[56] Breaching would improve water quality in the lower Snake River, would require less cooling water from Dworshak Reservoir, and thus would enhance normative conditions for listed anadromous fish in the lower Clearwater River, as well as in the lower Snake River.

- Battelle's Pacific Northwest Division/U.S. Geological Survey, Biological Resources Division

A June, 2000, report entitled "Assessment of the Impacts of Development and Operation of the Columbia River Hydroelectric System on Mainstem Riverine Processes and Salmon Habitats" (Assessment), jointly authored by Battelle's Pacific Northwest Division and the U.S. Geological Survey's Biological Resources Division, found that (1) bypassing the lower Snake River dams is the best recovery action for Snake River fall Chinook; (2) fall Chinook will not recover without restoring mainstem habitats and establishing a more natural flow regime; and (3) engineering fixes received the lowest marks among recovery options considered.[57]

The report, sponsored by the Northwest Power Planning Council and prepared for BPA, studied the effects of hydropower projects on historic salmon habitat in the mainstem Columbia and Snake Rivers, and evaluated potential habitat restoration actions. The report focused on the current and historic status of fall Chinook salmon in the two rivers, whose spawning and rearing habitat occurs largely within the mainstem rivers, as opposed to their tributaries.[58] The report found that dams have destroyed or degraded significant amounts of historic fall Chinook habitat, contributing to their decline.[59]

> temperatures at Ice Harbor Dam exceeded Washington's standard for more than 83 days on five occasions since 1980. Temperatures at Lower Granite Dam exceeded state limits for more than 85 days on two occasions. By comparison, the EPA found that temperature readings taken at Sacajawea, Wash., in 1956 exceeded today's standards for 66 days.

See also *EPA takes issue with corps salmon study: Agency says breaching dams might be the best way to improve water quality*, The Spokesman-Review, Apr. 29, 2000 <http://www.spokane.net/news-story.asp?date=042900&ID=s796921>.

[56] Brent Hunsberger, *Dams hurt river quality, the EPA says*, The Oregonian, Apr. 28, 2000 <http://www.oregonlive.com/news/oregonian/index.ssf?/news/oregonian/00/04/lc_61epa28.fram>.

[57] Battelle's Pacific Northwest Division and U.S. Geological Survey, Biological Resources Division, *Assessment of the Impacts of Development and Operation of the Columbia River Hydroelectric System on Mainstem Riverine Processes and Salmon Habitats*, (June, 2000) < http://www.nwppc.org/impacts.pdf>.

[58] The report found that accessible habitat for fall Chinook salmon is only approximately 13% and 20% of historic levels in the Columbia and Snake Rivers, respectively (p. 1.30). *See also* Multi-Species Framework, "Ecological Analysis of Regional Fish and Wildlife Alternatives" (Powerpoint slide presentation), Feb. 25, 2000 <http://www.nwframework.org/DraftFWAnalysis2100/sld038.htm> ("Greatest loss from potential is for fall chinook").

[59] "This project is intended to contribute to regional discussions regarding restoration of mainstem habitats including development of the Council's Fish and Wildlife Program. It should also contribute to the assessment of losses of fish and wildlife in the Columbia River Basin resulting from development and operation of the hydroelectric system. . . . Results from this study would contribute to the development of a scientific foundation and framework for the Council's Program and other regional efforts. It should help to structure these efforts and identify suitable conservation and management population units. It would also

The report notes that recovery is possible if strong actions are taken soon. Significant high-quality habitat is potentially available in currently submerged areas. Close study of lower Snake dam removal showed that this would result in significant habitat gains. With breaching, 87 percent of the area between Little Goose Dam and Lower Granite Dam would be conducive to fall Chinook salmon spawning.[60] The geomorphic model that was used predicted that, overall, more than half of the 238 km stretch of the lower Snake now inundated by dams would become suitable fall chinook spawning habitat should the dams be removed.[61] Except in relatively small areas, sedimentation would not be a significant long-term issue.[62]

Dam breaching, reservoir drawdowns and improved flows are required for fall Chinook salmon recovery, the study determined. Scientific experts at a conference convened to discuss the report and its findings supported dam breaching and flow management above any other broad category of solution: "The dam breaching and flow management categories were most favored by participants."[63] The same group identified engineering "fixes" as too risky, and they were substantially less favored among the proposed solutions.[64]

Finally, the report states:

> "In conclusion, ***we believe the primary actions required for recovery of anadromous salmonids dependent on mainstem habitats are re-establishment of natural flow regimes and maintenance of geomorphic features common to alluvial floodplains***. Changes to these essential riverine processes because of extensive hydroelectric development have contributed to significant population declines in fall chinook salmon. Consequently, ***it is not possible to increase natural production of fall chinook salmon in the Columbia River Basin without restoring those controlling factors and processes that supported their life history requirements***. In this context, ***selective reservoir drawdown and/or dam breaching, in combination with establishment of more normative flow regimes, is the only viable strategy for restoring mainstem habitats***.[65] . . . ***It is likely that all salmon populations in the Columbia River Basin will continue to decline unless restorative actions are taken to diversify some portion of mainstem habitats.***"[66]

Again, independent scientists have confirmed what the tribes have said for years. Perceptive non-tribal writers have also described in more eloquent terms what scientists have only much more recently articulated in the technical jargon of their profession:

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help to formulate strategies for restoration of a desirable fish population structure." <http://www.streamnet.org/nwppc/9800002sum.html/>.

[60] Assessment, p. 3.46.

[61] Assessment, p. 3.46.

[62] Assessment, p. 3.51.

[63] Assessment, pp. V, 2.10.

[64] Assessment, p. 2.1 ("The greatest uncertainties associated with risks and benefits were with engineered "fixes" of mainstem habitats . . .."); p. 2.10.

[65] Assessment, p. viii (Epilogue).

[66] Assessment, p. 1.36 (emphasis added).

> I have said that the Pacific salmon runs are probably the most spectacular natural resource on the face of the earth. Their greatness is less than it once was, but even today this annual movement of million upon millions of great gleaming fish through the length and breadth of the continental shelf toward their spawning in the high tributaries is a tremendous thing. The salmon runs, more surely and easily than almost any other resource, can be made to last and serve indefinitely, can ever be grown back to, or beyond, their full glory. . . . ***And there will be salmon and more salmon to complete this cycle so long as they are allowed to enter the rivers to their spawning in sufficient numbers, so long as the way to the spawning beds is kept clear and easy and open and so long as the rivers are kept clean and fresh and pure. It is as simple as that.***[67]

- Idaho Fish and Game Commission

The Idaho Fish and Game Commission has expressed support for breaching, stating:

> [T]he mainstem dam and reservoir system in the lower Snake and Columbia rivers is the primary factor limiting recovery of Idaho's wild salmon and steelhead. The smolt transportation program has not compensated for this limiting factor to date. . . . [T]he Commission considers the "natural river option" to be the best biological choice among the 1999 Decision Point options for recovery of Idaho's wild salmon and steelhead. Available information indicates that the natural river option is the only option that can meet Commission recovery standards, defined as a normative river providing 2-6% smolt-to-adult survival for inriver migrants.[68]
>
> The Idaho Fish and Game Commission has found the best ***and only*** way to achieve the survival needed for recovery is to create a more natural river by removal of the four lower Snake River dams.[69]

- Idaho Department of Fish and Game

The Idaho Department of Fish and Game supports natural river drawdown:

> [T]he natural river option is the best biological choice for recovering salmon and steelhead in Idaho. This assessment is logical, biologically sound, has the highest certainty of success and lowest risk of failure, and is consistent with the preponderance of scientific data. . . . The natural river option is the only option considered in the 1999 Decision Point that can provide recovery . . ..[70]

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[67] Roderick Haig-Brown, *A River Never Sleeps* (1946) (emphasis added).
[68] Idaho Fish and Game Commission, *Policy Statement*, May 8, 1998.
[69] Idaho Fish and Game Commission, *News Release* (May 29, 1998) (emphasis added). *See also Let's make sure this sockeye isn't the last at Redfish Lake*, Idaho Statesman, Aug. 25, 1998 ("Many top scientists and the Idaho Fish and Game Commission agree that a more natural river would be effective in restoring salmon and steelhead to Idaho. Breaching -- removing the earthen portion of the dams, leaving the concrete powerhouses and other structures in place -- could restore a natural river.").
[70] Idaho Department of Fish and Game, *Idaho's Anadromous Fish Stocks: Their Status and Recovery Options* 16-17 (May 1, 1998).

The then-Director of the Department wrote in 1997:

> As for the merits of dam breaching, the Department believes it is biologically clear that wild Snake River salmon and steelhead will do better in a free flowing river than in a series of dams and reservoirs. Of the long-term recovery options currently considered, we are increasingly confident that breaching the four lower Snake River dams is the option most likely to restore Idaho's wild salmon and steelhead.[71]

- Alaska Department of Fish and Game

The Alaska Department of Fish and Game has expressed support for breaching, in its comments on the Corps' FR/EIS, stating that:

> The fundamental conclusion of the Draft FR/EIS, the National Marine Fisheries Service's modeling analyses (Process for Analyzing and Testing Hypotheses, PATH and Cumulative Risk Initiative, CRI), and the U.S. Fish and Wildlife Service Coordination Act Report is the same: in order to recover the Snake River fall chinook, spring/summer chinook, sockeye, and steelhead, breaching the dams must be a part of the solution. Furthermore, action to recover these fish is needed now. The December 1999 CRI model highlights the real risk of extinction to spring/summer chinook (significant risk of extinction within the next 10 years) from any plan that delays action. More recent information concludes that the December CRI understates the risk. . . . Based on the information supplied in the Draft FR/EIS and its many appendices, and the All-H paper, ADF&G would support a variation on Alternative 4 that included breaching the dams, implementation of the PST agreement, habitat restoration programs, and improving water quality and quantity. We see such an alternative as the only way to meet the ESA requirements for listed Snake River fish. The other alternatives are most likely to not meet ESA requirements and eventually force Congress to make exceptions to the ESA. Furthermore, if an alternative involving breaching the dams is selected, ADF&G urges the federal agencies to mitigate the short-term impacts on fish and wildlife, and the short and long-term impacts on people who live in the affected areas.[72]
>
> ADF&G believes a modified Alternative 4 [dam breaching] is the best alternative for increasing survival of juvenile anadromous fish in the lower Snake River. Alternative 4 as presented falls short of meeting the Endangered Species Act requirements for the listed Snake River chinook, sockeye, and steelhead. The Final FR/EIS should address additional habitat and water required for their recovery. ADF&G believes that a modified Alternative 4 should reestablish the river habitat that scientists (Independent Scientific Group, U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Idaho Department of Fish and Game, and the

[71] Letter from Stephen Mealey, Director, Idaho Fish and Game Department, to Donald Chapman, Ph.D. (Oct. 31, 1997).

[72] Letter from Frank Rue, Commissioner, Alaska Department of Fish and Game, to Brig. General Robert H. Griffin, Division Engineer, U.S. Army Corps of Engineers, Mar. 30, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/deislet.htm>.

Columbia River Inter-Tribal Fish Commission) say is essential to restoring Snake River anadromous fish populations. The benefits to Snake River salmon and steelhead from a river habitat rather than a dam and reservoir habitat include:

- Significantly increased area of spawning and rearing habitat for Snake River fall chinook.
- Improved juvenile migration conditions for Snake River salmon and steelhead, including closer to natural water temperatures, decreased predation, faster in-river migration, (PATH estimates this alternative has the potential to about double the survival of juvenile salmonid migration)
- Reduced downstream migration mortality and injuries from turbines, handling, and bypass systems
- Improved upstream migration for adult salmon. Unlike questions surrounding juvenile fish mortality (delayed mortality) the factors contributing to upstream migration mortality are known: delayed passage, large volumes of spill, no spill, fallback, and high water temperatures. NMFS estimates that about 39 percent of adult fall chinook, 21 percent of the spring/summer chinook, and 15 percent of the sockeye are currently lost during passage through the eight dam and reservoir projects in the lower Columbia and Snake Rivers. Decreasing this adult mortality could significantly affect survival and recovery of these fish stocks
- Improved conditions for other native species of fish and wildlife in the Snake River basin by providing near-natural habitat
- Introduced species, including significant predators of juvenile salmon, would be disadvantaged.[73]

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[73] Office of the Commissioner, Alaska Department of Fish and Game, *Comments on the Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement*, Mar. 30, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/deiscom.htm>. *See also* Testimony by Frank Rue, Commissioner, Alaska Department of Fish and Game, to the Federal Agency Caucus On the Recovery of Snake River and Columbia River Salmon, Petersburg, Alaska, Mar. 9, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/ruetest.htm>:

> In the Draft Environmental Impact Statement on the Lower Snake River the Corps did not designate a preferred alternative. However, the US Fish and Wildlife Service was clear: only the restoration of a natural river ecosystem, including a healthy riparian corridor would provide those mitigation measures most important to anadromous fish. The Department of Fish and Game supports their analysis of the impacts of the various alternatives on Snake River salmon and agrees that removing portions of the dams, the Natural River Drawdown Alternative, is the best alternative for anadromous fish. The Corps' five-year study says that breaching the dams offers the best chance to restore fish populations to healthy levels. It also notes that the other alternatives presented offer only about a 50-50 chance of success and are "much less likely to yield recovery." The US Fish and Wildlife Service notes that the Maximum Transport Alternative would have little, if any, effect on the listed fish populations because the percentage of fish presently transported is already high. They also note that the Surface Bypass/Collection Alternative would have little, if any, effects on the listed fish populations. Again, our review of the many documents persuaded us that this is true. . . . I want to make it perfectly clear that as far as Snake River salmon fisheries are concerned, harvest is already fulfilling its role and further cuts will not get us closer to Snake River salmon recovery. You must look to the other H's to recover these fish. Further harvest

- Independent Scientific Group

In 1996, The Independent Scientific Group (ISG) released its landmark study, *Return to the River*.[74] The report called for "normative river conditions," or the restoration of ecological processes consistent with the needs of native fish and wildlife species. The authors faulted salmon recovery efforts for relying on failed technological fixes like artificial transportation, suggesting that it was doubtful whether technology could ever substitute for a natural river system.

- PATH (Process for Alternative Testing of Hypotheses)

The group of scientists involved in the Process for Alternative Testing of Hypotheses (PATH) estimated an 80 percent probability that bypassing the four dams would recover spring and summer chinook and a 100 percent probability that it would recover fall Chinook. Other options examined, including intensified fish barging, ranged from a 30 to 50 percent probability of recovery.[75] The

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> restrictions are not a viable option to recover these salmon. Such actions would not recover fall chinook and would do nothing for the other species, spring/summer chinook, sockeye, and steelhead. . . . The continued discussion of further harvest reductions for Snake River salmon is a waste of time simply because not much progress toward recovery can be made through further reductions. Rather federal agencies should move on to what the science shows may best help recover these stocks: breaching dams, habitat restoration, and augmented flows. . . . It is as clear as an unobstructed stream, that the dominant cause of mortality for all salmon populations in the Columbia River system, including the Snake River fall chinook, is the web of dams that have so changed the watershed as to make spawning, rearing and migration a lethal experience for anadromous fish. The biological opinion on the hydropower system, adopted by the National Marine Fisheries Service in 1995, acknowledged this by permitting the dams to kill from 62-99 percent of the migrating smolt and 39 percent of the returning adult salmon. I urge the federal agencies to move forward with a real recovery effort for the ESA listed fish in the Snake and Columbia River without delay. Viable solutions have been presented that include removing the earthen parts of the four lower Snake River dams, habitat recovery, and increased water flows. The position of the Department of Fish and Game, however, is clear: the best chance for recovery of these fish is a return to the natural river.

[74] The Independent Scientific Group, *Return to the River: Restoration of Salmonid Fishes in the Columbia River Ecosystem* (1996).

[75] *See* NW Fishletter 71, Nov. 25, 1998 (PATH scientists found that "the higher bar of achieving the 48-year recovery standard could be reached in 80 percent of the simulations by breaching the dams, nearly twice as much than predicted for the other two [non-breaching] scenarios."); *See also* Idaho Statesman, Dec. 30, 1998 ("Another group of 22 scientists brought together by federal authorities to seek a common position on salmon [PATH] said . . . that breaching four dams on the Snake River in Washington was the only option under study that could recover the fish."); *Breaching doubles odds of fish survival; Scientists say removing parts of four lower Snake dams is best bet for the fish*, Lewiston Tribune, Dec. 11, 1998 ("The [PATH] report concludes that breaching the four federally owned lower Snake River dams -- by removing portions to allow the river to flow unimpeded -- improves chances of restoring threatened and endangered fish populations by nearly 2-to-1 over the increased use of barges to ferry fish around dams."); *Study likely to support breaching Snake dams*, Tri-City Herald, Dec. 10, 1998 ("[R]emoval of major portions of all four dams on the lower Snake has a 100 percent chance of allowing fall chinook to meet all three recovery standards set by the National Marine Fisheries Service, the [PATH] study found. By comparison, maximizing the amount of barged fish only has a 15 percent chance of working for fall chinook . . .").

work by PATH has been the subject of intense examination and scrutiny,[76] but it remains one of the most thorough and extensive analyses of its kind.[77]

- American Fisheries Society

By a unanimous vote of 103 to 0, the Oregon Chapter of the American Fisheries Society endorsed breaching the four lower Snake River dams, stating, in part:

> Whereas: Recent scientific reviews, including those conducted as part of the Independent Scientific Advisory Review process, the collaborative and peer-reviewed Plan for Analyzing and Testing Hypotheses, and the Fish and Wildlife Coordination Act report on the Corps of Engineers Lower Snake River Juvenile Salmon Migration Feasibility Study Environmental Impact Statement have all indicated that restoration of natural river conditions where the lower four Snake River dams occur has the highest likelihood of preserving and recovering listed salmon and steelhead and poses the least risk to survival;
>
> Whereas: Failure to restore Snake River salmonids to sustainable, fishable levels threatens to put the federal government in a position of failing to meet its Treaty Trust responsibilities; . . .

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[76] *See More Polarization Over PATH Process*, NW Fishletter 73, Jan. 5, 1999 ("[T]he Weight of Evidence Panel . . . gave more credibility to the states' and tribes' salmon passage model than BPA's own $5 million CRiSP model. The four scientists on the panel found more empirical evidence for the flow/survival relationship in the FLUSH model, little evidence that climate change had much of an effect on the stocks, and agreed with the FLUSH model's hypothesis that passage through the hydro system caused mortality in salmon once they were beyond the river."); *Kitzhaber Takes on BPA Over PATH Gripes*, NW Fishletter 71, Nov. 25, 1998 ("The four scientists [on the "Weight-of-Evidence," or Scientific Review Panel (SRP)] who reviewed evidence for major uncertainties used in two computer models judged that the state agencies' and tribes' FLUSH model fitted empirical data better than the CRiSP model developed by University of Washington scientists.").

[77] *See, e.g.*, Columbia Basin Bulletin, Jan. 29, 1999 ("Doug DeHart, Director of Fisheries [for Oregon Department of Fish and Wildlife], discussed the PATH report and its conclusions, saying that as a biological decision analysis, the report is scientifically sound, credible, comprehensive, objective and conclusive. 'I believe this biological decision analysis is the best of its kind and must be considered to be part of the final decision. Recovery will only occur under options that approach the natural river,' DeHart concluded."). In response to attempts to undermine PATH's work, Governor Kitzhaber responded:

> PATH scientists recently completed the most scientifically rigorous and credible analysis to date of how listed Snake River spring and summer chinook may respond to changes in the FCRPS. The analysis reflects input from all PATH scientists and has been evaluated by a panel of expert scientists with no vested interests in the outcome. . . . One important piece of information provided by the WOE [Weight of Evidence] Report is that ***listed salmon are most likely to survive and recover if the four federal dams in the lower Snake River are breached***. Another, and equally important piece of information, is that ***breaching the dams is the only scenario where the likelihood of recovery meets the jeopardy standard established by the National Marine fisheries Service***.

Letter from John Kitzhaber, Governor, State of Oregon, to Judi Johansen, Administrator and CEO, Bonneville Power Administration (Nov. 5, 1998) at 2 (emphasis added).

> Therefore be it resolved that, based on the best scientific information available, it is the position of the Oregon Chapter of the American Fisheries Society that:
>
> - The four lower Snake River dams are a significant threat to the continued existence of remaining Snake River salmon and steelhead stocks;
> - If society-at-large wishes to restore these salmonids to sustainable, fishable levels, a significant portion of the lower Snake River must be returned to a free-flowing condition by breaching the four lower Snake River dams, and that this action must happen soon[78]

This followed a similar vote last year by the Western Division of the same organization in support of breaching:

> Whereas: Dramatic action must be taken soon to prevent some, or perhaps even most remaining Snake River salmon and steelhead stocks from extinction;
>
> Whereas: Recent scientific reviews, including those conducted as part of the Independent Scientific Advisory Review process and the Plan for Analyzing and Testing Hypotheses, have indicated that restoration of natural river conditions where the lower four Snake River dams occur has the highest likelihood of preserving and recovering listed salmon and steelhead and poses the least risk of unanticipated side-effects;
>
> Whereas: The U.S. Fish and Wildlife Service Lower Snake River Compensation Plan Office, charged with compensating for salmon and steelhead losses associated with mortality caused by the four lower Snake River dams, has concluded it cannot meet its salmon compensation objectives; . . .
>
> Therefore be it resolved that: Based on the best scientific information available, it is the position of the Idaho Chapter of the American Fisheries Society that the four lower Snake River dams are a significant threat to the continued existence of remaining Snake River salmon and steelhead stocks;
>
> Let it be further resolved that: If society-at-large determines that Snake River salmon and steelhead are to be restored or recovered in their native ecosystem, then one biologically required action is to eliminate or greatly reduce impacts to salmon and steelhead from the four lower Snake River dams by removing, breaching, or bypassing the dams, or otherwise allowing the lower Snake River to flow freely, without impoundment . . ..[79]

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[78] Oregon Chapter, American Fisheries Society, *Resolution of the Oregon Chapter of the American Fisheries Society on Snake River Salmon and Steelhead Recovery*, Feb. 17, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/afs_reso.htm>. *See Scientists pretty much agree about dam breaching*, The Oregonian, Mar. 26, 2000 (reader opinion by Dave Holder, President, Oregon Chapter, American Fisheries Society).

[79] Western Division, American Fisheries Society, *Resolution of the Western Division of the American Fisheries Society On the Role of Dams and Snake River Salmon and Steelhead Recovery* (July 13, 1999 <http://www.fisheries.org/wd/news/1999/Resolution_dams_snake_river_salmon_steelhead.htm>.

- Over 200 Fisheries Scientists

In March, 1999, over 200 fisheries scientists wrote to President Bill Clinton, imploring his Administration to take action to protect and preserve anadromous fish in the Snake River Basin, and seriously consider partial removal of the lower Snake River dams, stating in part:

> We, the undersigned scientists, are gravely concerned that current measures to recover Columbia basin salmon and steelhead are falling far short of what is needed to avert widespread extinctions in the near future. We are especially concerned that the current management approach appears to be fixed on a path of technological solutions instead of a return to more normative river conditions. The former path is a dangerous one that is likely to send several depressed stocks into extinction over the next few decades. The situation is particularly acute in the Snake River basin, where over the last thirty years wild salmon and steelhead runs have declined by nearly 90 percent following the construction of four federal dams on the Lower Snake River. Today, every native run of salmon and steelhead in the Snake River basin either is already extinct or listed for protection under the federal Endangered Species Act. . . . Barging and trucking of juvenile migrants began experimentally more than 20 years ago in an attempt to mitigate for the effects of a river system made lethal by the Federal Columbia River Power System. Since its inception, the transportation program has never sustained the minimum smolt-to-adult survival rate that is needed to begin rebuilding wild Snake River salmon and steelhead stocks. It has failed even to halt their decline. Every independent scientific analysis on this subject since the landmark 1996 Return to the River report by the Independent Scientific Group (ISG) has concluded that juvenile fish transportation in the Columbia-Snake river system is a failed practice that should be phased out in lieu of a return to more normative river conditions. The most comprehensive PIT-tagging study to date now shows that even with technological advances, the transportation program has failed to produce the minimum survival rate that is required to begin rebuilding wild Snake River salmon and steelhead stocks. The most recent data indicates that a five to fifteen-fold increase in survival rates is needed in order to meet NMFS recovery goals. There is building scientific consensus that the surest way to restore wild Snake River salmon and steelhead runs is to reclaim a 140-mile-long reach of their migration corridor by bypassing four dams on the Lower Snake River. . . . According to the PATH (Plan for Analyzing and Testing Hypotheses) scientific group, . . . the natural river option is the only recovery action that has a high likelihood of restoring wild Snake River salmon and steelhead runs to healthy levels. The Idaho Department of Fish and Game calls the natural river option "the best biological choice for recovering salmon and steelhead in Idaho," saying it is "logical, biologically sound, has the highest certainty of success and lowest risk of failure, and is consistent with the preponderance of scientific data." The natural river option is the only recovery strategy under consideration that is consistent with the normative river principles outlined in Return to the River. . . . If these runs are allowed to vanish, the foundation of the Interior Northwest's ecosystems will be severely undermined. The weight of scientific evidence clearly shows that wild Snake River salmon and steelhead runs cannot be recovered under existing river conditions. Enough time remains to restore them, but only if the failed practices of the past are abandoned and

> we move quickly to restore the normative river conditions under which these fish evolved. . . . Biologically, the choice of how to best recover these fish is clear, and the consequences of maintaining the status quo are all but certain.[80]

- Oregon Governor John Kitzhaber, M.D.

While a politician, Governor Kitzhaber, as a medical doctor, no doubt has some familiarity with science and its processes. Governor Kitzhaber has expanded on his earlier scientific pronouncement that bypassing the dams to benefit salmon was a "biological no-brainer"[81] in an extended speech, stating:

> This is not about sacrificing economic benefits for environmental health -- it is about working together as a region to have both. It is about striking a victory for regionalism over parochialism. To quote Wallace Stegner, it is about "outliving our origins" and "building a society to match our scenery." I believe that one way to accomplish that and to equitably spread the economic burden is to build a recovery strategy that includes breaching the four Lower Snake River dams.[82]

- Alaska Governor Tony Knowles

In official testimony to the Federal Caucus, Governor Knowles stated:

> The sad truth is that National Marine Fisheries Service now believes Snake River chinook salmon migrating to the sea are safer in a barge or in trucks on the highway than they are in a river that has been transformed from a natural watershed into an industrial machine. If there is commitment to restore salmon in the rivers, the only presented scientific option is to restore the rivers of the Northwest to a natural condition. This is the only way to assure recovery of these stocks, and it is the only option that satisfies the requirements of the new Pacific Salmon Treaty agreements on habitat and safe passage. This is no small challenge for the Nation and Northwest, as the Columbia and Snake Rivers have become a virtual "killing field" for salmon. The National Marine Fisheries Service (NMFS) allows the federal dams on the Columbia and Snake Rivers to kill 62-99 percent of the juvenile Snake River fall chinook and nearly 40 percent of the adults. Oregon biologists estimated the dams are responsible for up to 93 percent of total mortality on Snake River fall chinook. Alaska biologists note 70 percent of the river miles between the ocean and the spawning grounds for these fish have been converted to reservoirs. . . . Scientists in the Pacific Northwest increasingly point to the four lower Snake River dams as a critical part of the problem, and the only lasting solution. The Oregon Chapter of the American Fisheries Society, the number one professional fisheries management organization in the area, states: "If society-at-large wishes to restore these salmonids

[80] "Scientists' Letter to President Bill Clinton" (Mar. 22, 1999) <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/scientst.htm>.
[81] Gov. John Kitzhaber, *Governance and the Columbia River* Conference, Portland, Oregon (Oct. 15, 1998).
[82] Gov. John Kitzhaber, Speech to the Annual Meeting of the Oregon Chapter of the American Fisheries Society, Eugene, Oregon (Feb. 18, 2000) <http://www.governor.state.or.us/governor/speeches/s000218.html>.

> to sustainable, fishable levels, a significant portion of the lower Snake River must be returned to a free-flowing condition by breaching the four lower Snake River dams." Our own Alaska Department of Fish and Game biologists confirm that assessment is sound, as do biologists from the U.S. Fish and Wildlife Service. Over 500 Alaska commercial fishermen and several Alaska sport and commercial fishing organizations have already joined the American Fisheries Society in support of bypassing the four lower Snake River dams.[83]

- Cities and municipalities

Cities and municipalities that have taken position in support of breaching include Seattle (by vote of the City Council), Astoria, Oregon, and Pelican, Alaska.

- Newspapers

A number of newspapers, both in the region and beyond, have taken positions in favor of breaching the four lower Snake River dams. They include the *Idaho Statesman* (Boise, Idaho),[84] the *Idaho Post-Register* (Idaho Falls, Idaho),[85] the *New York Times*,[86] the *Boston Globe*, the *Los Angeles Times*, the *Denver Post*, the *San Francisco Chronicle*, the *Baltimore Sun*, the *Milwaukee Journal Sentinel*, the *Hartford Courant* (Hartford, Connecticut), the *Philadelphia Inquirer*, *Champaign News-Gazette* (Champaign, Illinois), the *Daily Astorian* (Astoria, Oregon), the *Tampa Tribune*, the *Juneau Empire*, the *Albany Times Union* (Albany, New York), the *St. Petersburg Times*, the *Quad City Times* (Iowa), the *Scranton Times*, and the *Minneapolis Star Tribune*, and the *Providence Journal* (Providence, Rhode Island), among others.[87]

Many other groups and organizations have joined the call for partially removing the four lower Snake River dams.[88] Included among them are hundreds of Alaskan fishermen.[89] Like the CTUIR,

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[83] Testimony by Alaska Governor Tony Knowles, State of Alaska, To the Federal Agency Caucus On the Recovery of Snake River and Columbia River Salmon, Juneau, Alaska, Mar. 8, 2000 <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/govtest.htm> (Presented by David Benton, Deputy Commissioner, Alaska Department of Fish & Game).

[84] *Let's make sure this sockeye isn't the last at Redfish Lake*, Idaho Statesman, Aug. 25, 1998:

> Thousands of adult sockeye used to return to Redfish Lake every year . . . to reproduce and die. These days, however, the word 'Redfish' is not so much descriptive as it is symbolic of better days. Why? Four dams on the lower portion of the Snake River in Washington are the primary reason that the numbers of fish have plummeted so alarmingly in the past two decades. Breaching those four dams is the best way to begin recovering Idaho's dwindling populations of migratory fish.

[85] Idaho Post-Register, May 19, 1998 ("When the National Marine Fisheries Service decides this issue late in 1999, it will be faced with only one certain biologically sound option--breaching the dams.")

[86] *Saving the Snake River Salmon*, New York Times, Apr. 2, 2000.

[87] *See* <http://www.removedams.org/SOS-site/action/edboard.htm>.

[88] *See, e.g.*, News Release from Northwest Sportfishing Industry Association (Oct. 15, 1998) ("[A]fter years of declining salmon runs and the failure of fish barging and other expensive 'techno-fixes,' it is clear that restoring more natural river conditions is the only hope for our salmon an steelhead. . . . The best available science continues to re-affirm the need to restore more natural river habitat for salmon. Years of declining

nearly all these supporters recognize that breaching alone is not enough. But all other measures combined, without breaching, will not be enough. Partial removal of the four dams is an essential component of any effort to effectively protect and restore Snake River fish. Breaching is necessary to eventually de-list salmon under the Endangered Species Act. It is necessary to rebuild and restore the runs ***and their habitat*** leading to sustainable, harvestable salmon populations consistent with tribal Treaty Rights and the federal government's Trust Responsibility to the tribes.

In the past, the tribes have fought for strong actions in the other three, non-hydrosystem Hs. Time and time again, however, we have run into roadblocks, or a brick wall, often from federal agencies. After many years and much frustration, we have been left with no choice but to support breaching. We wish that breaching was not necessary, but overwhelming, reliable, independent evidence suggests that it is.[90]

VII. Strategy: Tributary Habitat

The Strategy asserts that NMFS has developed an analysis showing substantial increases in fish productivity in the Salmon River basin if water diversions and cattle grazing are "addressed." However, it appears that this analysis has been misused and that Strategy's claims are highly exaggerated, at best. This analysis is a key element in the federal government's claims that large

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fish runs show that fish barging has not worked. . . . we need to reform the largest harvester of salmon and steelhead in the river, the federal dams . . .."); News release from Northwest Energy Coalition (Nov. 6, 1998) ("[S]cientific evidence makes it clear that the dams and reservoirs are the single greatest human cause" of salmon mortality. Scientific studies have "produced extremely persuasive evidence that partial removal of the four lower Snake River dams is essential to restoration of Snake River salmon and steelhead," and that "economic studies show that the region can retain low cost electricity after the partial removal. The Northwest Energy Coalition endorses the partial removal of the four lower Snake dams to restore salmon and steelhead."

[89] *Alaska Commercial Fishermen Endorsing Removal of The Four Lower Snake River Dams* <http://www.state.ak.us/local/akpages/FISH.GAME/geninfo/hot/esr/fishermn.htm>.

[90] *See, e.g.*, Letter from Stephen Mealey, Director, Idaho Fish and Game Department, to Donald Chapman, Ph.D. (Oct. 31, 1997) ("As for the merits of dam breaching, the Department believes it is biologically clear that wild Snake River salmon and steelhead will do better in a free flowing river than in a series of dams and reservoirs. Of the long-term recovery options currently considered, we are increasingly confident that breaching the four lower Snake River dams is the option most likely to restore Idaho's wild salmon and steelhead."); Donald Chapman, Congressional Testimony (quoted in Idaho Department of Fish and Game, *Idaho's Anadromous Fish Stocks: Their Status and Recovery Options* 17 (May 1, 1998)) ("[I]f we want to go back to the harvestable runs of the 1950s, 45 years ago, there is only one way to do that: take out four lower Snake River dams . . . [T]hat is the only way to do it. We are not going to get there by tweaking the system."); Idaho Statesman, Dec. 30, 1998 ("A growing consensus of scientists says Idaho's salmon and steelhead will go extinct if dams on the Columbia or Snake rivers aren't breached."); *See generally* Blumm, et al., *Saving Snake River Water and Salmon Simultaneously: The Biological, Economic, and Legal Case for Breaching the Lower Snake River Dams, Lowering John Day Reservoir, and Restoring Natural River Flows*, 28 Envtl. L. 997 (1998) ("In this article, the authors comprehensively review the major scientific and economic studies on breaching the lower Snake River dams and conclude that this option is not only scientifically sound, but also economically affordable. In fact, they assert that dam breaching may prove to be less costly, both economically and socially, for upriver economic interests than attempting to improve the current restoration program.").

scale implementation of habitat improvements will be adequate to prevent jeopardy to listed salmon.

The CTUIR's questions whether the federal government can reasonably demonstrate the feasibility of implementing habitat improvements to the degree required and with the resources provided. Furthermore, we question whether tributary habitat improvement alone, even assuming full implementation, could compensate sufficiently for hydrosystem mortality. The lack of specifics for tributary habitat and other non-hydro actions also results in little substance regarding monitoring and evaluation.

VIII. Strategy: Hatcheries

Artificial propagation programs, which supplement natural production, are deemed "experimental" because they "have not ensured long term enhancement of self-sustaining populations in natural habitats." The CTUIR questions why the lower Snake River dams, for instance, are not subjected to this same strict standard? There is abundant pristine habitat in the Snake Basin where unsupplemented populations with insignificant harvest are nevertheless very depressed and declining.

Snake River anadromous fish populations have all consistently declined or gone extinct since the construction of the federal dams in the lower river in the 1960s through the mid-1970s. These dams clearly "have not ensured long term enhancement of self-sustaining populations in natural habitats." Why then are these dams not viewed like hatchery supplementation? Instead, their potential future removal is viewed as experimental. The Umatilla Basin salmon and steelhead restoration program is a success because mainstem fish passage problems were appropriately addressed (not delayed) and hatchery supplementation was aggressively implemented as a restoration measure (not as a "safety net" experiment as suggested in the federal documents).

Hatchery reform calls for most or all fish to be marked for selective fisheries and research. This is extremely expensive and unnecessary. Umatilla Basin fish restoration has been a model for success without mass marking or selective fisheries.

Finally, the CTUIR agrees that the Corps should fund capital improvements at Lower Snake River Compensation hatcheries. A hatchery needing immediate attention is Lookingglass Hatchery in the Grande Ronde Basin. Due to lack of necessary water treatment facilities, the tribes have been precluded from restoring salmon in Lookingglass Creek above the hatchery. In addition, lack of financial commitments at this facility has put at risk the health and survival of listed fish, which have been incubated and reared there.

IX. Strategy: Harvest

The federal government has stated that harvest restrictions are one of the management actions with the most certain and immediate benefits for listed fish. While survival improvements from other actions for other life stages are possible, most of these improvements will occur over a longer period of time and are not capable of precise quantification at present. Still, the documents do not face up to this dilemma.

Under the federal approach, the dams would remain in place for at least another ten years of "wait and see" monitoring and research while harvest is expected to shoulder the major burden of reducing mortality. The Opinion and the Strategy rationalization that harvest restrictions provide immediate benefits, while benefits from hydrosystem changes and tributary habitat will take longer to achieve, might be slightly more persuasive if more of the changes recommended by the tribes in the hydro, tributary habitat and hatcheries "Hs" were actually implemented. The "practicability" of hydro and tributary habitat actions seems to depend upon their perceived costs. In contrast, aside from token mentions of Trust Responsibility to tribes, there is no discussion or apparent concern about the ongoing economic impacts to tribes of maintaining the current depleted runs.

Instead, the Opinion and the Strategy provide for differential treatment of harvest as opposed to the other sources of salmon mortality. The tribes have already made substantial commitments and sacrifices, sometimes over a period of decades, without commensurate actions in the other Hs. As a result, tribal recovery and restoration efforts have been undermined. Furthermore, additional proposed tribal harvest restrictions will apparently be largely "credited" to BPA.

The documents assign hydro (the major human-induced mortality factor), particularly breaching, a comparatively low priority, to considered in the future, while at the same time emphasizing harvest (a minor human-induced mortality factor) as the principal target for bearing the immediate conservation burden before other measures are implemented. This is unacceptable, as the tribes have already made major harvest concessions while waiting for substantive federal hydro improvements to occur. It is inappropriate, and illegal, to be targeted for additional conservation actions in lieu of implementing necessary and overdue hydro improvements.

Both these documents dismally demonstrate that, under the federal proposals, dams will continue to kill vastly more fish than treaty harvest. Plainly, there is an inequitable allocation of the conservation burden. Even the federal government admits that its RPA for hydro operations will still result in jeopardy for a number of salmon populations. To "solve" this difficulty, the concept of "off-site mitigation" has been pulled out of the hat like a reluctant rabbit. Since BPA, the Corps and the Bureau of Reclamation cannot or will not make the changes in the hydro-system needed to avoid jeopardy salmon, they propose to get the needed reductions in mortality by assigning them to other causes.

An intentionally low target which at best minimally avoids jeopardy will not even begin to provide meaningful natural production and harvest levels. The documents are based on achievement of "no jeopardy." The CTUIR doubts that this is likely. Even if it did occur, however, resulting relic populations would still be below subbasin natural production goals, which are well below natural production plus harvest goals. This last milestone must be achieved to satisfy the federal government's treaty and trust obligations to the CTUIR and other tribes.

X. Conclusion

We remain committed to doing everything we can to ensure that runs are rebuilt and all species and all stocks are restored to harvestable levels that fulfill our Treaty Rights. The CTUIR is extensively involved in a host of salmon recovery measures, such as restoring and protecting tributary habitat, to assist in rebuilding the runs. Nevertheless, it will take major improvements in mainstem passage--like those gained from breaching the four Lower Snake River dams--to achieve the minimum 2 to 6 percent smolt-to-adult returns necessary to begin recovering Snake River populations.

The Confederated Tribes of the Umatilla Indian Reservation appreciates the opportunity to comment on the Draft FCRPS Biological Opinion and the Draft Basin-Wide Salmon Recovery Strategy. We look forward to consulting with you on these important documents, and on overall federal efforts to better protect and enhance tribal trust assets in the Columbia River Basin. Should you have any questions or wish to discuss any of these matters further, please feel free to contact me or Gary James (Fisheries Program Manager), at (541) 276-4109, or Carl Merkle (Salmon Recovery Policy Analyst) or Rick George (Environmental Planning/Rights Protection Program Manager), at (541) 276-3449.

Sincerely,

[signed]

Michael J. Farrow
Director
Department of Natural Resources

Cc: CTUIR Board of Trustees
CTUIR Fish and Wildlife Committee
CTUIR Water Committee
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MJF: DNR: EP/RP: cfm